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(19) **United States**(12) **Patent Application Publication****Tan et al.**(10) **Pub. No.: US 2014/0313081 A1**(43) **Pub. Date: Oct. 23, 2014**(54) **MULTIPLE BEAM FORMATION FOR RF
CHIP-BASED ANTENNA ARRAY**(71) Applicant: **Nokia Siemens Networks Oy, (US)**(72) Inventors: **Jun Tan**, Lake Zurich, IL (US); **Thomas
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(57)

ABSTRACT

A method for selectively performing beam formation using a RF chip-based antenna array is described. The method includes determining whether to use a plurality of antenna arrays in one or more common carrier substrates in either a single group or a plurality of groups. The method also includes, in response to determining to use the plurality of antenna arrays in a single group, providing a single coupling factor to all antenna arrays in the plurality of antenna arrays and, in response to determining to use the plurality of antenna arrays in a plurality of groups, providing, for each group in the plurality of groups, a group-specific coupling factor to each antenna array in the group. Apparatus and computer readable media are also described.

